

PC*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/CA2005/000261

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:
 - ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
 - ☐ international search (Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (Rule 12.4(a))
 - ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - ☐ pages _____ as originally filed/furnished
 - ☒ pages* 1-19 received by this Authority on 27 February 2006
 - ☐ pages* _____ received by this Authority on _____
 - ☒ the claims:
 - ☐ pages _____ as originally filed/furnished
 - ☐ pages* _____ as amended (together with any statement) under Article 19
 - ☒ pages* 20-24 received by this Authority on 27 February 2006
 - ☐ pages* _____ received by this Authority on _____
 - ☒ the drawings:
 - ☒ pages 1-4 _____ as originally filed/furnished
 - ☐ pages* _____ received by this Authority on _____
 - ☐ pages* _____ received by this Authority on _____
 - ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing *(specify)*: _____
 - ☐ any table(s) related to sequence listing *(specify)*: _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing *(specify)*: _____
 - ☐ any table(s) related to sequence listing *(specify)*: _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. II Priority

1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:

☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).

2. ☐ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

The validity of the priority claims has been considered. The Authority does have in its possession a copy of the earliest filed application whose priority has been claimed. The claimed priority date is considered valid.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/CA2005/000261**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1-36	YES
	Claims	none	NO
Inventive step (IS)	Claims	1-36	YES
	Claims	none	NO
Industrial applicability (IA)	Claims	1-36	YES
	Claims	none	NO

2. Citations and explanations (Rule 70.7)

D1: CA 2,343,184 (VICTREX) 23 March 2000

D1 discloses a method for the preparation of proton exchange membranes, based on cross-linked sulfonated poly (ether ether ketones), the cross-linking performed by thermally activating bridges of the polymer chains with polyatomic alcohols, which makes the polymer mechanically stronger and reduces its swelling by water. dry SPEEK polymer was dissolved in a solvent (water-acetone or water-alcohol mixtures), various amounts of the crosslinker were added, and after agitation, the solution was cast to obtain the membrane.

Novelty (N):

The subject matter of claims 1-36 is novel and thus does meet the criteria of Article 33(2) of the PCT.

The amendment to the present claims to restrict the sulfonated polymer to a degree of sulfonation greater than 0.6 and the ratio of polyol molecules per repeat unit of the sulfonated polymer higher than or equal to 1 is novel over D1.

Inventive Step (IS):

The subject matter of claims 1-36 is considered to involve an inventive step and thus does meet the criteria of Article 33(3) of the PCT. It would not be obvious to one skilled in the art to utilize the above-mentioned sulfonated polymer or the polyol cross-linking agent in the specific amounts used to produce cross-linked proton exchange membranes.

Industrial Applicability (IA):

The subject matter of claims 1-36 is industrially applicable and thus does meet the criteria of Article 33(4) of the PCT.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The description at page 1 is objected to under PCT Article 5. All documents referred to in the description of any application must be available to the public.

The expression "incorporated by reference" on page 1 is objected to under PCT Article 5.